NOTE: The following two pages list some of the available computer programs for VHF/UHF/SHF link engineering. Contact ASR for details.

FIGURE 13a. AVAILABLE COMPUTER ANALYSIS MODELS

PROPAGATION PATH LOSS

a. MPS. Master Propagation System consisting of three models.

    (1) TIREM. Terrain Integrated Rough Earth Model uses terrain profiles to compute values of basic transmission loss, 40 MHz to 20 GHz.

    (2) NLAMBDA. A groundwave propagation model which predicts the loss based on the smooth, spherical earth theory.

    (3) ARPROP. An area propagation model for calculating propagation loss over paths where the terrain roughness is estimated, 20 MHz to 20 GHz.

b. ADSEM. Automated Digital System Engineering Model is designed to determine if two terminals are within RLOS of each other.

c. PLLM. Path Loss Line Of Sight Model is used to generate map overlays, including overlays to depict terrain shielding.

d. RAPIT. Radio Propagation Over Irregular Terrain calculates basic propagation path loss between two isotropic antennas, field intensity/power intensity at a point and available power or available signal-to-noise ratio (S/N) in a receiver.

e. SHADO. Calculates and plots the areas around a fixed point that are within RLOS.

f. HORIZON. Calculates the RLOS for 360° around a specified site, using an on-line digitized terrain data base.

g. PROFILE. Calculates elevation versus distance data (path profile) between two specified sites using an on-line digitized data base.

h. POPROP. Pointwise Propagation Model predicts propagation path loss, field strength/power density over a discrete path.

i. MSAM. The Microcomputer Spectrum Analysis Models (MSAM) are a collection of engineering programs useful for spectrum management. These models were adapted to run on the IBM PC and compatible computers by the NTIA. These programs have not been rigorously tested, but have been verified to be correct for many scenarios run over a number of years. Specific programs include bearing/distance, satellite azimuth, intermodulation. nlambda-90, frequency dependent rejection, NTIA annex I, antenna field intensity, personal computer plot, profile, horizon single-emitter analysis, terrain integrated rough-earth model, power density display and line-of-sight.